

CLAIMS

What is claimed is:

1. A vehicle transmission system comprising:
an automated mechanical transmission shiftable between a first and a second gear ratio;
a first component;
a second component movable relative said first component;
a first sensor adjacent said first component;
a second sensor adjacent said second component;
a controller in communication with said first sensor and said second sensor, said controller operable to determine a relative movement between said first component and said second component indicative of an approximately zero torque condition to initiate a shift between said first and said second gear ratio.
2. The vehicle transmission system as recited in claim 1, wherein said first and second sensor are speed sensors.
3. The vehicle transmission system as recited in claim 1, wherein said controller identifies a speed irregularity signature generated by said first and second sensor.
4. The vehicle transmission system as recited in claim 3, wherein said controller identifies a first noise signature component indicative of an approximately zero torque condition.
5. The vehicle transmission system as recited in claim 1, wherein said controller identifies a vibration signature.

6. The vehicle transmission system as recited in claim 1, wherein said first component comprises a shaft.

7. The vehicle transmission system as recited in claim 1, wherein said first component comprises a torsional damper.

8. The vehicle transmission system as recited in claim 1, wherein said first component comprises a transmission input shaft and said second component comprises a transmission output shaft.

9. The vehicle transmission system as recited in claim 1, wherein said first component comprises a vehicle wheel.

10. The vehicle transmission system as recited in claim 1, wherein said first component comprises a transmission housing.

11. The vehicle transmission system as recited in claim 1, wherein said relative movement comprises a torsion movement.

12. The vehicle transmission system as recited in claim 1, wherein said relative movement comprises an axial movement.

13. A method of controlling a vehicle transmission comprising the steps of:
- (1) determining a relative movement between a first component and a second component;
 - (2) relating the relative movement of said step (1) to an approximately zero torque condition; and
 - (3) shifting the vehicle transmission between a first and a second gear ratio in response to identification of the zero torque condition.

14 A method as recited in claim 13 wherein said step (1) comprises determining a torsion movement.

15 A method as recited in claim 13 wherein said step (1) comprises determining an axial movement.

16. A method as recited in claim 13, wherein said step (1) comprises:
determining a vibration.

17. A method of controlling a vehicle transmission comprising the steps of:
- (1) determining a speed irregularity between a first component and a second component;
 - (2) relating the speed irregularity of said step (1) to an approximately zero torque condition; and
 - (3) shifting the vehicle transmission between a first and a second gear ratio in response to identification of the zero torque condition.